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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,704	01/05/2001	Lee D. Bergerson	TRW(VSSIM)4696	5186

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EXAMINER

CULBRETH, ERIC D

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/755,704

Applicant(s)

BERGERSON ET AL.

Examiner

Eric D Culbreth

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 15-22, 27, 29-32, 40, 41 and 43-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-22, 27, 29-32, 40, 41 and 51-66 is/are allowed.
- 6) ☒ Claim(s) 1 and 43-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 48-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 48 is not clear as to what the MEMS device is. The claim recites the electric circuitry connected to the MEMS devices through the means for mounting to the housing. This would infer the MEMS devices are mounted to the substrate, the substrate forming the means for mounting. But the substrate also has the “electric” part of the microelectromechanical device. Hence, it is not clear what the means for mounting with the circuitry connected to it in claim 48 is.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Thorn (of record).

Thorn discloses occupant protection device 44 and a microelectromechanical system device (MEMS) 10 energizable to cause actuation of the protection device (note cartridges 12 which would be mechanical and printed circuit board 24, which would include microelectronics) (claim 1).

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Noting the remarks filed on page 13 of the 7/9/04 amendment, the definition of “micro” device given from Webster’s II Dictionary (“small or abnormally small”) is met by Thorn (i.e., *small* or abnormally small; components of Thorn such as the materials forming the circuit on the printed circuit board would be “small” if not “abnormally small”).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thorn.

The dimensions of the MEMS device (1/2 inch wide and long in claim 43, plenums up to 10 mm deep in claim 44, plenums of up to 1.4 mm diameter in claim 45) are an obvious matter of design choice, as case law holds that “the size of the article under consideration...is not ordinarily a matter of invention” (In re Rose, 105 USPQ 237 (CCPA 1955)). Regarding claim 46, to make the inflator of Thorn of a plurality of MEMS devices (i.e., more than one printed circuit board with cartridges on each one) would be obvious, as case law has held that the mere fact that a given structure is integral does not preclude its consisting of various elements (Nerwin v. Erlichman, 168 USPQ 177, 179 (PTO Board of Interferences 1969) and that it would be obvious to duplicate parts (i.e., to include two circuit boards with cartridges) for, say, a multiplied effect (St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7th Cir. 1977)).

7. Claims 47-50 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Thorn in view of Faigle et al (of record).

Thorn discloses an inflator that includes a MEMS device (printed circuit board 24 with cartridges 12). While Thorn does not teach a plurality of such devices, as noted above, it would be a matter of obvious design choice to include plural boards and cartridges instead of one printed circuit board with cartridges. Faigle et al discloses controller 50 (being a microprocessor, it would have electric circuitry) responsive to sensor input from sensor 52 to operate a plurality of inflation fluid sources 22, 24, etc. in inflator 20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thorn to include electric circuitry remote from the inflator with the MEMS devices as taught by Faigle et al in view of the Nerwin case law above that making integral devices separate is not patentable. Regarding claim 48, Thorn teaches inflator housing 16 and MEMS device 24, 12, 12, etc. mounted to the housing via circuit board 24, and in the combination Faigle et al's lines 60, 62, 64, etc. would be attached to the circuit board which is the means for mounting also as indefinitely recited. Regarding claim 48, lines 60, 62, etc. of Faigle et al would be "lead wires" (lines connecting a microprocessor and inflator are notoriously lead wires like the wires to Thorn's igniter 18 in Figure 4) between the housing and the electric circuitry operatively connecting the MEMS devices to the circuitry through circuit board 24. Regarding claim 50, each MEMS device of the plurality of MEMS devices includes a base 24 having electric circuitry that would be operatively connected to Faigle et al's circuitry 50 in the combination.

Allowable Subject Matter

8. Claim 15-22, 27-29-32, 40-41, and 51-66 are allowed.

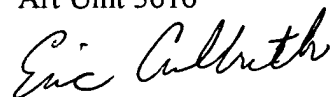
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric D Culbreth whose telephone number is 703/308-0360. The examiner can normally be reached on Monday-Thursday, 9:30-7:00 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 703-308-2089. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric D Culbreth
Primary Examiner
Art Unit 3616



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